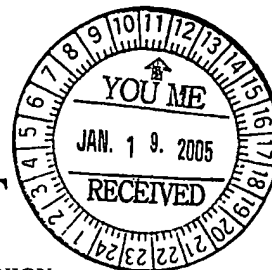


PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING



PCT

WRITTEN OPINION

(PCT Rule 66)

To:

YOU ME Patent & Law Firm

Teheran Bldg., 825-33 Yoksam-dong, Kangnam-ku, Seoul
135-080, Republic of Korea

Date of mailing
(day/month/year) 14 JANUARY 2005 (14.01.2005)

Applicant's or agent's file reference
OPP031431KR

REPLY DUE within 1 months from
the above date of mailing

International application No.

PCT/KR2003/002479

International filing date (day/month/year)

18 NOVEMBER 2003 (18.11.2003)

Priority date(day/month/year)

27 NOVEMBER 2002 (27.11.2002)

International Patent Classification (IPC) or both national classification and IPC

IPC7 C08K 5/107, C08K 77/18, B32B 27/38, G03F 7/004

Applicant

DONGJIN SEMICHEM CO., LTD. et al

1. This written opinion is the first (first,etc.) drawn by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

3. The applicant is hereby invited to reply to this opinion.

When ? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d)

How ? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3
For the form and the language of the amendments, see Rules 66.8 and 66.9

Also For an additional opportunity to submit amendments, see Rule 66.4
For an examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis
For an informal communication with the examiner, see Rule 66.6

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 17 MARCH 2005 (17.03.2005)

Name and mailing address of the IPEA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

BAHN, Yong Byung

Telephone No. 82-42-481-5539



WRITTEN OPINION

International application No.

PCT/KR2003/002479

I. Basis of the opinion

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement) under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheet/fig _____

5.

- ☐ This opinion has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed."

WRITTEN OPINION

International application No.

PCT/KR2003/002479

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

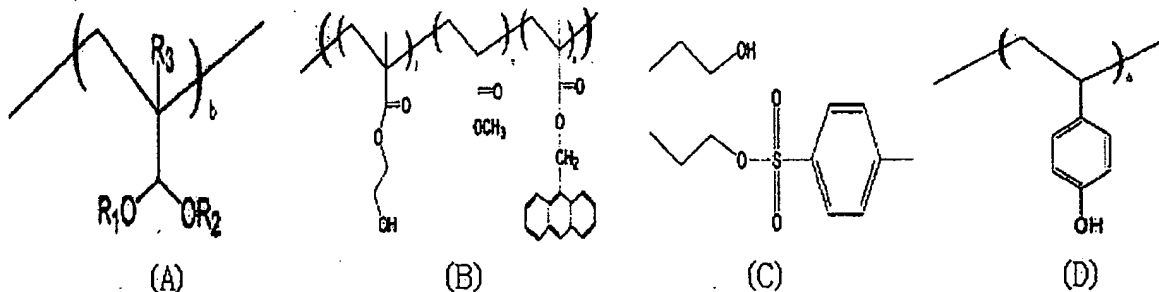
| | | | |
|-------------------------------|--------|------|-----|
| Novelty (N) | Claims | 1-11 | YES |
| | Claims | NONE | NO |
| Inventive step (IS) | Claims | NONE | YES |
| | Claims | 1-11 | NO |
| Industrial applicability (IA) | Claims | 1-11 | YES |
| | Claims | NONE | NO |

2. Citations and explanations

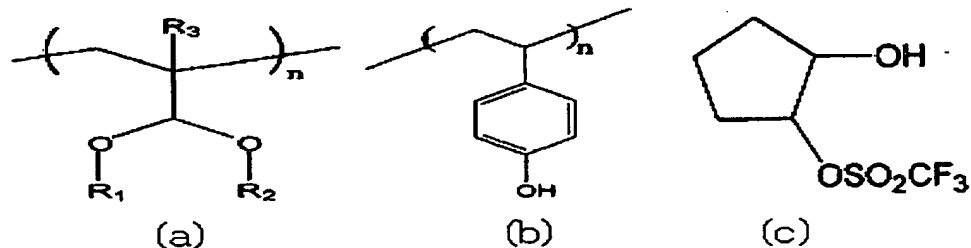
Reference is made to the following document:

D1 : KR 2001-18906 A (Hynix Semiconductor Inc.)

The present invention according to claims 1-11 relates to an organic anti-reflective composition, a patterning method using the same and a semiconductor device prepared by using the same patterning method. This organic composition comprises a crosslinking agent(A), a light absorbing agent(B), a thermal acid generator(C), an organic solvent(D) and an adhesivity enhancer(E).



Document D1 is considered to represent the most relevant state of the art, discloses an organic polymer for preventing anti-reflection comprising a polymer of formula 1 as a crosslinking agent(a), a polyvinylphenol of formula 6 as a photo-absorbing agent(b), a thermal acid generator of formula 7(c) and an organic solvent(d).



(Continued on Supplemental Box.)

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of:

BOX V.

Comparing the present invention with D1, both inventions are the same in preparing an organic anti-reflective composition comprising a crosslinking agent, a light absorbing agent, a thermal acid generator, and an organic solvent.

An adhesivity enhancer(E) in the present invention is used for effectively solving the standing wave effect and significantly preventing pattern collapse of photosensitizer on top of the organic anti-reflective film. However, it can be already used in the document D1 as a photo-absorbing agent or light-absorbing agent. And the (B) component is also a light-absorbing agent. So, it is obvious for the person skilled in the art that the (B) and (E) components in the present invention can be chosen together as a light absorbing agent.

Also, a thermal acid generator(C) in the present invention is same in the role of generating a thermal acid, comparing with (c) in document D1. It is also obvious for the person skilled in the art that a thermal acid generator can be used as a catalyst even if the chemical structure is slightly different.

So, claims 1-11 are trivial and not capable of supporting the requirements of inventive step under PCT Article 33(3).

Consequently, claims 1-11 are novel and also appear to be industrially applicable, but not inventive.